

## ABSTRACT OF THE DISCLOSURE

An alternator system having an alternating current voltage source includes a rectifier coupled to the voltage source, a sensor coupled to the voltage source and an engine and a control circuit coupled to the voltage source, the rectifier and the sensor. The control  
5 circuit provides control signals to the rectifier and the voltage source. The alternator system further includes a fault protection controller coupled to an output of the alternator system and coupled to the control circuit. The rectifier operates such that the alternator system provides a load match which results in output power levels which are relatively high compared with output power levels of conventional alternator systems and the fault  
10 protection controller operates under fault conditions (e.g. load dump), and overrides the other controllers in the alternator system based on output voltage when a load dump occurs.